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ABSTRACT

This research addressed vocabulary knowledge, which refers to the understanding of words, the overall ideas and concepts being communicated, and the ability to use those words in the appropriate context. The targeted population consisted of students in kindergarten, first grade, and fourth grade. An analysis of School Improvement Plans revealed a need for emphasis on vocabulary acquisition and development. In reviewing probable cause data, the researchers discovered classroom vocabulary instruction was inadequate, exposure to meaningful spoken language was insufficient, prior knowledge was limited, and achievement in reading was affected by the limited understanding of vocabulary. A thorough literature search resulted in the development of a variety of solution strategies which were implemented. These included increased reading time, the use of visual aids, multiple exposures to words, and the activation of prior knowledge. Postintervention data collected from standardized and teacher-created assessments indicated an increase in expressive and receptive vocabulary, improved richness and complexity of responses over time, enhanced understanding of new vocabulary, and an increased use of theme-related words in writing and speaking. Appended are: Parent Survey on vocabulary Knowledge; Teacher Survey on Vocabulary Knowledge and Instruction; Student Questionnaire on Vocabulary Knowledge (kindergarten and First Grade); Student Questionnaire on Vocabulary Knowledge and Instruction (Fourth Grade); Rubric for Vocabulary Using in Journal Writing; Weekly Pre-Test; Weekly Post-Test. The final appendixes contain the following worksheets from "Quick Activities To Build a Very Voluminous Vocabulary" and "50 Graphic Organizers for Reading, Writing, and More" (1999) published by Scholastic Professional Books: Vocabulary Inventory; Synonym Wheels; Word Webs; Feature Matrix; K-W-L Chart; Multiple Meaning Map; T-Chart; Word Tree; Venn Diagram; and Prefix and Suffix Web. (Contains 25 references, 8 figures, and 2 tables.) (Author/RS)

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WORD DETECTIVES: SOLVING THE MYSTERY OF VOCABULARY

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An Action Research Project Submitted to the Graduate Faculty of the

School of Education in Partial Fulfillment of the

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In reviewing probable cause data, the researchers discovered classroom vocabulary instruction was inadequate, exposure to meaningful spoken language was insufficient, prior knowledge was limited, and achievement in reading was affected by the limited understanding of vocabulary.

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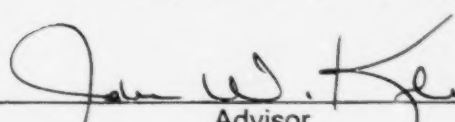

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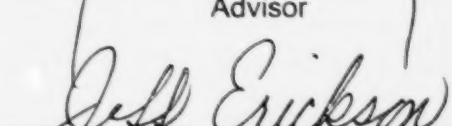

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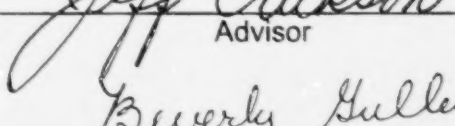

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CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

The targeted kindergarten, first grade, and fourth grade students have exhibited a lack of vocabulary knowledge. Vocabulary knowledge refers to both the understanding of words and the overall ideas and concepts being communicated. Through observation, the researchers determined that students often do not apply new words in written and spoken language and frequently use them in the wrong context. In developing the 2000-2001 School Improvement Plan, the researchers were instructed to compile a list of areas of concern with respect to their classroom curricula. Analysis of this information revealed a need for emphasis on vocabulary acquisition and development. This, along with direct observation of students' written work, provided evidence of this problem.

Immediate Problem Context

The action research was conducted in three classrooms at one site. The classrooms will be referred to as Classroom A, Classroom B, and Classroom C.

School Description

The elementary school is located in a small town in the Midwest. The building, which houses grades K-6, is a neighborhood school that was completed in 1961. An addition to this one-story, handicapped-accessible facility was completed in 1967

(Chamber of Commerce Publication, 2000). A large park with playground equipment and a public swimming pool are located adjacent to the school building. The structure is divided into two wings, one for kindergarten through third grades located on the east side, and one for fourth through sixth grades located on the south side. In the east wing, there are two sections of each grade level, as well as a music room, speech room, resource room, and a math improvement-developmental reading area. In the south wing, there are two sections of fourth and fifth grade, three sections of sixth grade, a teacher's lounge, a library, a computer laboratory with 30 student workstations, a teacher workroom, and the administrator's office. With the exception of the library, computer laboratory, and administrator's office, the building is neither air-conditioned nor carpeted.

According to the 2000 Illinois School Report Card, the ethnic background of the student body was 93.6% White, 2.9% Hispanic, 2.9% Asian/Pacific Islander, 0.3% Native American, and 0.3% Black. The total enrollment was 314 students. Attendance was rated at 96.9%, and student mobility was 1%. Students from low-income families comprised 5.1% of the student body. No students with limited-English proficiency attended this school.

The school employed 41 staff members to provide quality education and support. Of these, there were 14 regular division teachers, 12 teachers of special classes, 9 instructional aides, 3 clerical assistants, 2 custodians, and 1 administrator. All staff members were Caucasian with 91.2% being female and 8.8% male. The teaching staff averaged 18.4 years of experience with 50.0% of the teachers holding a master's degree (Official Seniority List, 2000). The teachers' salaries at this school ranged from $29,844 to $50,315 (District Salary Schedule, 2001).

The average class size in the targeted school in kindergarten and first grade was 18.5 students which increased to 22.5 students in third grade and 25.0 in sixth grade. The kindergarten classes met for half-day sessions. Special education services are delivered both in the regular division classroom setting and in a pullout program as determined by Individualized Education Plans. Additionally, math improvement and developmental reading programs are offered. A speech therapist, social worker, occupational therapist, physical therapist, and computer laboratory assistant also provide services to the school.

Physical education and music classes are provided twice per week. Computer instruction and library services are available once per week, while a parent volunteer presents art lessons in regular division classes once per month. Sixth-grade students participate in the Drug Awareness Resistance Education (D.A.R.E.) program, which is taught by a local police officer. In addition, after-school clubs sponsored by our Parent-Teacher Organization are offered for a nominal fee. These classes are taught by parent volunteers, teachers, and specialized professionals.

Classroom A Description

Classroom A is a kindergarten room located in the east wing of the school building. Two half-day sessions meet in this room. One unique feature of this classroom is an outside entrance, which allows the children to enter and exit more freely. A single-stall lavatory is available for student use. Windows, which have screens and can be opened, line the north wall, allowing for ample lighting and fresh air. The focal point of the room is a brightly-colored rug that serves as a meeting place for reading, calendar activities, and classroom discussions. The children complete daily tasks at large

hexagon-shaped tables. The room is organized into learning centers: a library, a listening station, an art and craft corner, a writing center, and three computer workstations. Room displays reflect the instructor's thematic approach to teaching. The children are encouraged to discover the joy of learning through various enriching activities.

Classroom B Description

Classroom B, a first grade room, is located in the east wing on the south side of the building. This room has two functional windows, which offer a view of the asphalt playground. A sink is available for classroom cleanup. A large, brightly patterned rug is located in the library area, and the walls are print rich. Student desks are arranged in groups of four, and three computers are provided for pupil use. This classroom configuration is conducive to small group and cooperative learning activities. There are numerous mathematical manipulatives and educational games available for the students to use. A large, kidney-shaped table is utilized for reading and writing instruction. The classroom environment is warm and inviting and provides daily opportunities for growth and development.

Classroom C Description

Classroom C is a fourth grade room located in the south wing on the west side of the building. Windows line the entire wall, which is a feature of the classrooms located on this side. A brightly-colored rug displaying a map of the United States resides in one corner of the room and serves as a quiet reading area. Student desks are clustered into groups of five, allowing for many small group and cooperative learning activities. In addition, there is a desk provided for the instructional assistant who works with a student with Down syndrome. Students mainly use the two classroom computers for the

Accelerated Reading program. The classroom exemplifies structure and order, with materials organized so that students have easy access to all supplies.

School District Description

This school district is a unit district comprised of four elementary school buildings, one junior high school building, and one senior high school building. Each elementary school building houses students in kindergarten through 6th grade with enrollments ranging from 300 to 400. The junior high school building houses students in 7th and 8th grades with an approximate enrollment of 500. This building is also home to the school district administrative offices and the office of special education. The senior high school building houses students in the 9th through 12th grades and serves about 1,000 pupils (Chamber of Commerce Publication, 2000). According to the 2000 Illinois School Report Card, instructional expenditure per pupil in this district was $4,179, which was slightly below the state average of $4,291. Attendance was rated at 95.5%, and student mobility was 6.6%.

The school district employed 179 classroom teachers of which 100% were Caucasian, and 74.4% were female. The average teacher in this school district had 16.5 years of teaching experience and earned a salary of $42,331. Teachers with advanced degrees comprised 47.2% of the staff. The pupil-teacher ratio for the elementary school buildings was 18.0 to 1, which was slightly less than the state average of 19.3 to 1.

Community Description

This ever-growing Midwest community is located in a rural setting. In recent years, however, the community has experienced an influx of commercial, residential, and industrial growth with local businesses ranging in size from small businesses to major

corporations. This growth can be attributed to the village's location near two interstate highways and a large metropolitan area. The metropolitan area provides access to an international airport, three large-scale hospitals, a private university, a junior college, a convention center and arena, a museum, and a well-developed-park system. The residents of the village have all the convenience and lifestyle of a smaller community in addition to the resources of the larger urban area.

The village had a population of 15,430, according to the 1996 Special Census. Of these people, 98.6% were white, and the remaining 1.4% was classified as "Other." The median family income was $45,813. Homes were owned by 74.6% of the village's residents with a median home value of $78,800. A distinct advantage of living in this community is the fact that 80% of the homes are within walking distance of one of four elementary schools and that the high school and junior high school buildings are centrally located (Chamber of Commerce Publication, 2000). The village takes an enormous amount of pride in its schools, and these institutions have become an integral part of community life.

An elected mayor and Board of Trustees serve the town. The community also employs full-time Emergency Medical Technicians, 25 paid volunteer firemen, and 20 full-time police officers. Furthermore, the village boasts a modern public library, which was recently expanded and renovated. The number of churches, over 25, reflects the community's deep spiritual roots. Two of these churches have organized educational institutions of their own, both of which are elementary schools. (Chamber of Commerce Publication, 2000). The relatively safe, secure environment, the quality of public

services, and a well-respected school system, have enticed many families to call this city their home.

National Context of the Problem

Teachers are finding a growing number of students who lack sufficient vocabulary knowledge. Nagy (1988, p. 1) describes vocabulary knowledge as ". . . fundamental to reading comprehension; one cannot understand text without knowing what most of the words mean." The size of a child's vocabulary is critical to his or her academic success (Dickinson, Cote, & Smith, 1993). Research shows children are capable of learning an average of 3,000 words per year (White, Power, & White, 1989). The key to maximizing this potential is finding better ways to improve vocabulary instruction. Irvin (2001, p. 42) asserts that ". . . instruction should . . . focus on helping students become independent learners."

Traditional methods of instruction, which focus mainly on definitions and context clues, have fallen short in building students' working vocabulary and have made the teaching of vocabulary a chore. In a study on vocabulary instruction, Watts (1995) indicates that most teachers use more than one traditional method of teaching vocabulary, but rarely did they activate prior knowledge, provide multiple exposures, or teach strategies for independent word learning. Classroom vocabulary instruction tends not to provide strategies that allow for transfer of word knowledge into other areas. Thus, students often do not apply newly acquired vocabulary knowledge in spoken and written form across the curriculum. When asked the importance of vocabulary instruction, a teacher interviewed by Watts (1995) stated:

It allows kids to be articulate. It allows them freer rein expressing themselves. . .

> in their writing. I try to make sure that they understand that there are different shades to words just like there are different shades of paint and that they should be attempting to paint; that you can't paint a vivid picture when all you have are five crayons. (p. 418)

Providing the students with the necessary tools to build a solid foundation in reading and writing will allow them to be effective communicators of language.

The ability to read and understand the meaning of words is critical to a student's overall academic success. According to Rupley, Logan, and Nichols (1999), reading instruction that centers on building children's vocabulary improves their ability to understand what they read. Unfortunately, analysis of professional literature finds that vocabulary development has been frequently overlooked as a topic of interest in educational circles. Padak and Rasinski (1998) found that only 2% of all articles submitted to The Reading Teacher in 1997 concentrated on vocabulary instruction. Clearly, more research needs to be focused on the relationship between vocabulary instruction and how it affects a child's ability to read.

CHAPTER 2

PROBLEM DOCUMENTATION

Problem Evidence

The researchers attempted to identify possible deficiencies in student vocabulary knowledge and word usage. Documentation was obtained using a variety of data collection instruments. Parents of students in the targeted classrooms were asked to complete a survey assessing their child's vocabulary knowledge. In addition, all teachers at the targeted site were requested to complete a survey regarding the vocabulary knowledge of their students. The information provided insight into current vocabulary instructional practices. Students in the designated classrooms were also invited to complete a questionnaire concerning their knowledge of words. Finally, recent School Improvement Plan (SIP) records were studied to determine how often vocabulary instruction was deemed to be a school-wide area of concern. Additional data was collected from various standardized assessments. Results from the Iowa Test of Basic Skills (ITBS) were reviewed and analyzed to note changes in scores on the vocabulary component of the examination. The Expressive One-Word Picture Vocabulary Test (EOWPVT) was used to assess each student's expressive vocabulary, while the Peabody Picture Vocabulary Test (PPVT) was used to assess each student's receptive vocabulary.

The parent survey on vocabulary knowledge was developed by the researchers to provide information concerning individual language experiences outside the classroom

setting (see Appendix A). Questions focused on parental involvement in the reading process, the child's interest in new words, the process of deciphering unknown words, and the ability to verbalize in an age-appropriate manner. Parents of the targeted kindergarten, first grade, and fourth grade students were asked to complete the survey at the beginning of the school year.

Table 1

Percentage Results of the Parent Survey on Vocabulary Knowledge

Question	Never	Seldom	Sometimes	Always	No Answer
1. How often do you read with your child?	2	7	51	40	0
2. Is your child interested in learning new words?	2	4	46	49	0
3. Is your child able to have an age-appropriate conversation?	0	0	7	92	0
4. Do you spend time talking with your child regularly?	0	0	12	88	0
5. Does your child choose to read on his or her own?	2	16	47	35	0
6. Do you and your child spend time at the library?	7	25	49	18	0
7. How often does your child ask you the meanings of words?	4	11	40	39	0
8. Does your child enjoy playing word games?	5	11	42	33	4

Surveys were returned by 92% of the kindergarten, first grade, and fourth grade parents. Less than 9% of all respondents seldom or never read with their child on a regular basis. Furthermore, fewer than 67% of parents and their children were regular visitors to a library. Even though more than two-thirds of the parents claimed to frequent the local library, only 35% chose reading as their child's activity of choice. All parents stated that their children had access to ample reading material at home, and 32% of students had a TV in their bedroom.

The teacher survey on vocabulary knowledge and instruction was developed by the researchers to gather data from teachers concerning instructional practices pertaining to vocabulary and students' vocabulary knowledge (see Appendix B). Questions focused on teachers' opinions regarding the current reading series, strategies used to teach vocabulary, and the ability of students to transfer vocabulary into daily writing. Teachers at the targeted site were asked to complete the survey at the beginning of the school year.

The aforementioned survey was distributed to all faculty members who were involved in reading instruction, including the library, resource, and specialized reading teachers. All teachers agreed that preteaching vocabulary words is important and that reading aloud to the class improves student vocabulary. Yet, teachers disagreed on whether students have a larger vocabulary than they did ten years ago and that reading the same book more than one time is important. Only 8% of teachers felt that students were able to consistently transfer knowledge of new vocabulary into their writing, and over 30% believed those students seldom transferred word knowledge into their writing. Although teachers placed a high value on daily reading, 31% indicated that students were not given ample opportunity to accomplish this task during a normal school day.

Interestingly, while many teachers expressed concerns about their students' word knowledge, parents generally believed their children's vocabulary was not only grade level appropriate but above average.

Table 2

Percentage Results of the Teacher Survey on Vocabulary Knowledge and Instruction

Statement	Never	Seldom	Sometimes	Always	No Answer
1. Reading aloud to my students improves their vocabulary.	0	0	15	85	0
2. Reading the same book more than one time is important.	23	8	38	31	0
3. Children today have a larger vocabulary than 10 years ago.	23	15	31	23	8
4. Students transfer knowledge of vocabulary into their writing.	0	31	62	8	0
5. Preteaching vocabulary words is important.	0	0	8	92	0
6. Students are given ample opportunity to read daily.	0	31	23	38	0
7. Graphic organizers are vital to vocabulary instruction.	15	0	38	46	0
8. Students rely mostly on context to decipher new words.	8	46	38	8	0
9. Students enjoy learning new words.	0	23	38	38	0

The student questionnaire on vocabulary knowledge was developed by the researchers to provide information concerning the child's perceptions and attitudes of his

or her vocabulary competency (see Appendices C and D). Questions focused on strategies for deciphering unknown words, enjoyment of the reading process, and the number of words possessed in each student's working vocabulary. Fourth grade students completed the questionnaire independently in class, whereas kindergarten and first grade students dictated their responses to the examiner. The information was collected at the beginning of the school year and at the end of the first semester.

Following completion of the student questionnaire, the data was compiled and analyzed by the researchers, and certain similarities in responses were noted. When asked what steps are taken when they encounter an unfamiliar word, students, regardless of grade level, stated they would attempt to first and foremost sound out the word. Additional strategies mentioned were asking a parent or teacher, researching the word in the dictionary, and skipping the word with hope of gaining meaning through context. Kindergarten and first grade students reported that they learn new words through reading, from their parents, and in school. The responses of fourth grade students reflected past experiences with vocabulary instruction. Students noted that former teachers had taught vocabulary mainly using flash cards, games, daily word study, and written definitions. The majority of students expressed a strong desire for learning new vocabulary through word games. However, when asked the number of words the students think they know, a wide spectrum of responses was found. Answers ranged from as few as 3 words to as many as 4,000 words known.

Additional sources of information pertaining to vocabulary instruction were the School Improvement Plan documents from the preceding five years. To comply with state and school board mandates, each school is required to analyze test data and to obtain input from teachers to pinpoint instructional areas needing improvement. Upon analysis

of these records, researchers noticed that vocabulary development consistently appeared as an area of focus for all grade levels. Furthermore, teachers observed that students lacked skill in content-specific vocabulary and often neglected to transfer vocabulary skills into their daily writing. Although these deficiencies were noted, no specific strategies were identified to address these concerns.

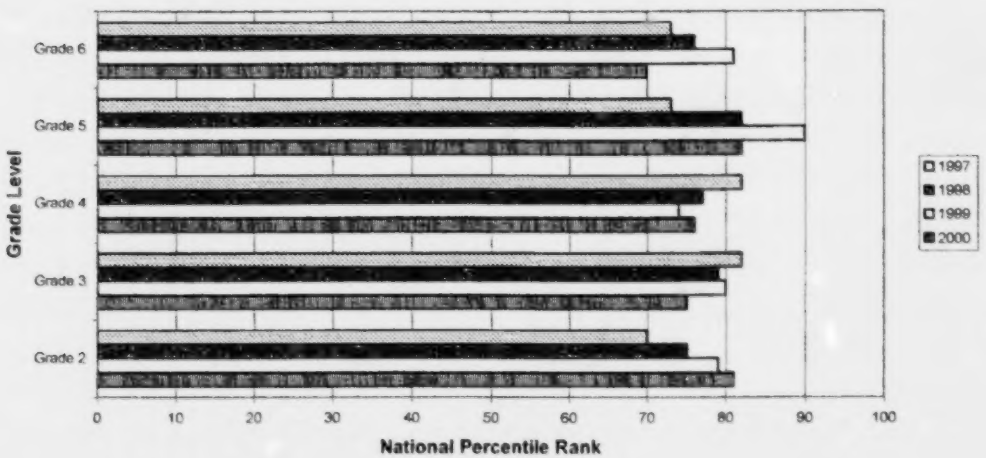

Figure 1. Results of targeted students' performance on the vocabulary component of the Iowa Test of Basic Skills (ITBS) from 1997-2000.

Scores from the vocabulary portion of the ITBS from the previous four years were also compiled and analyzed. This standardized assessment provided information comparing the performance of the targeted students with that of students in similar grade levels across the country. National percentile rank scores ranged from 70 to 90%. The researchers noted that there was a slight decrease in vocabulary performance over the previous three years in three of five grade levels. Generally, these scores did not indicate an overall school-wide deficiency in the area of vocabulary, but test construction needs to be considered when viewing these results. This test consisted of matching selected vocabulary words with appropriate definitions but with very limited contextual clues.

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The ITBS measures a student's ability to extract word meaning from short phrases, but the test is not designed to measure a student's ability to apply vocabulary knowledge. Thus, the researchers consulted other methods of assessment.

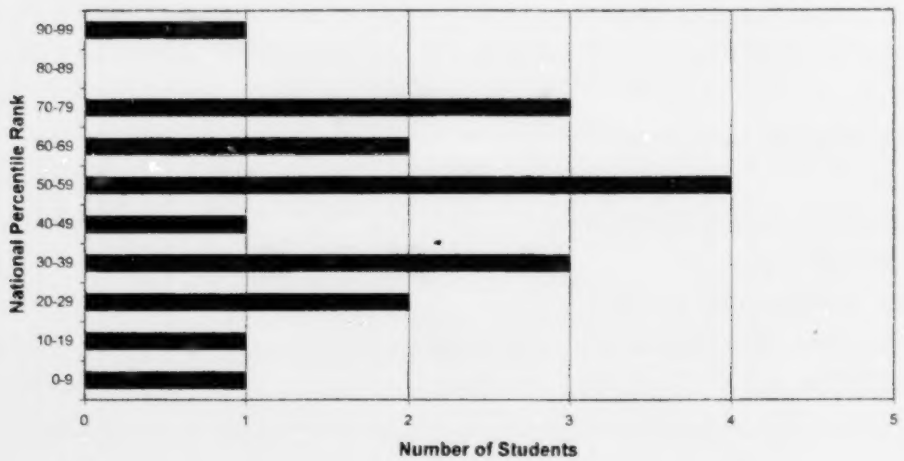

Figure 2. Results of targeted students' performance on the Peabody Picture Vocabulary Test (PPVT).

The receptive vocabulary of targeted kindergarten, first, and fourth grade students was measured by the Peabody Picture Vocabulary Test (Dunn, Dunn, and Dunn, 1997). Receptive vocabulary refers to the understanding of word meanings. This standardized, non-verbal test required the child to view four pictures and select the one picture that represented the word spoken by the examiner. This test was administered to students individually in September and in January. The instrument measured the general vocabulary competency of the students. The examiners chose this test because it could be administered across grade levels, and it provided baseline data for the action research.

Six students from each of the targeted classrooms were selected to participate in this project. The researchers determined this to be a manageable number of students to test due to the time needed to complete and evaluate the premeasures, postmeasures, and

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weekly journal assessments. Additionally, the researchers decided that targeting six students per classroom provided an adequate sampling of the overall student population. The students' individual raw scores were tabulated, and the results were converted into national percentiles. Upon graphing the data, a bell-shaped curve became evident with 10 of 18 targeted students scoring in the average range (see Figure 2). Furthermore, 8 of 18 students ranked at or below the 50th percentile. A subsequent breakdown of scores by grade level indicated that kindergarten students performed significantly better on this assessment than first and fourth grade students. The mean percentile score for kindergarten students was 58 while first and fourth grade students scored 45 and 47 respectively.

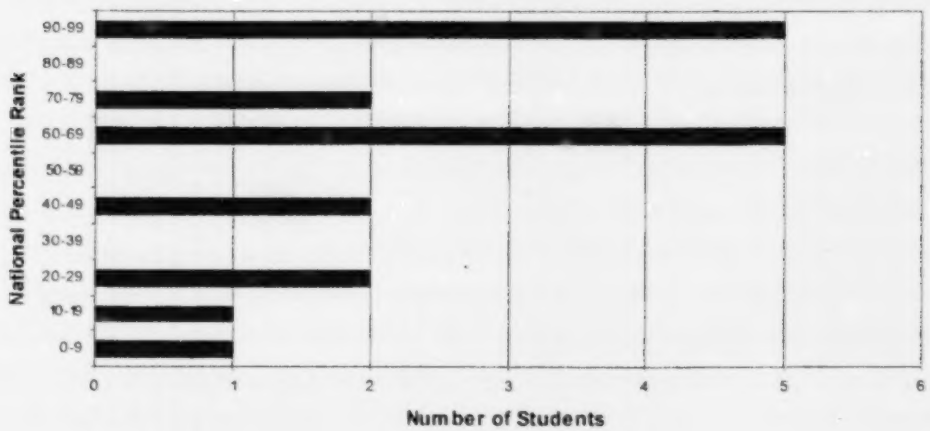

Figure 3. Results of targeted students' performance on the Expressive One-Word Picture Vocabulary Test-R (EOWPVT-R).

The expressive vocabulary of all targeted students was measured by the Expressive One-Word Picture Vocabulary Test-R (Gardner, 1990). Expressive vocabulary refers to the child's ability to verbalize words when presented with a picture. This standardized test required the child to view individual pictures and then identify them. This test was administered individually to targeted students in September and December. The instrument

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measured the general vocabulary competency and verbal ability of the students, which provided the researchers with additional data for the action research.

As with the Peabody Picture Vocabulary Test, individual raw scores on the Expressive One-Word Picture Vocabulary Test-R were tabulated, and the results were converted into national percentiles. Upon graphing the data, the researchers noted that 14 of 18 targeted students scored in the average to above average range (see Figure 3). Additionally, 12 of 18 students ranked at or above the 60th percentile. A further breakdown of scores by grade level indicated that first and fourth grade students performed significantly better on this assessment than the kindergarten students. The mean percentile score for kindergarten was 40 while first and fourth grade students scored 70 and 74 respectively. Interestingly, when comparing the two standardized assessments, the differences in the mean percentile scores for kindergarten students were markedly lower than those of first and fourth grade students.

Probable Causes

Building a firm foundation in listening, speaking, reading, and writing vocabulary is vital to all areas of the curriculum. When developed properly, these components can pave the way to a student's academic success. Conversely, when inadequately developed, the path to success becomes more difficult. The researchers have identified four probable causes of deficiencies in student vocabulary knowledge. These include an inadequate quality of vocabulary instruction in schools, an insufficient exposure to meaningful spoken language, limited prior knowledge or experiences, and difficulty with the reading process.

A cause often cited when addressing vocabulary knowledge deficiencies is the traditional approach to vocabulary instruction implemented in many schools. Simpson (1996) contended that the simple decoding of words and the mere memorizing of definitions

are very traditional approaches to vocabulary instruction. Another commonly used method of instruction involves inferring word meaning from context. Nagy (1988) argued that neither of these strategies goes beyond partial word knowledge; therefore, the meaning of words becomes only part of a student's short-term memory. Students are often taught to memorize definitions of words for the weekly test but are not provided the skills to adequately transfer this knowledge into long-term memory. Watts (1995) maintained "Teachers defined the importance of vocabulary knowledge in terms of the immediate classroom environment and requirements thereof, and not within the context of larger environments such as the school or society" (p. 399).

An additional cause of vocabulary knowledge deficiency is an insufficient exposure to meaningful spoken language. Beals, De Temple, and Dickinson (1994) asserted that " . . . the two key elements that separated children with larger and smaller vocabularies were the amount of exposure they had to unfamiliar words and the extent to which they were involved with adults in analytical and cognitively challenging discussion" (p. 32). Thus, one could infer that those children who do not regularly engage in meaningful conversation with adults will have limited vocabularies. In the context of the classroom, meaningful conversation might involve the discussion of materials students have read. Elley (1989) stated that children who received explanations of word meaning during the reading of a book made greater gains in vocabulary than did children who simply listened to the story. The aforementioned traditional approaches to vocabulary instruction frequently lack the meaningful multiple exposures needed to promote a lasting grasp of word meaning.

Students' limited prior knowledge or lack of experiences may affect their vocabulary development. Winters (2001) contended "If a word or experience is to stay with us for long, we must somehow anchor it with something we already know" (p. 660). Without the benefit

of a plethora of rich language experiences, children will lack the foundation necessary to successfully connect new words with what they already know. Rupley, Logan, & Nichols (1999) affirmed "Children's vocabulary knowledge closely reflects their breadth of real-life and vicarious experiences. . . . Readers' experiential and conceptual backgrounds are extremely important in vocabulary development" (p. 337).

It would seem logical to presume that those students who are more capable readers would encounter a more difficult and varied vocabulary while reading than those struggling readers who often select less challenging material. Shefelbine (1990) stated that low vocabulary students are at a disadvantage when it comes to independently acquiring new vocabulary because they encounter too many unknown words. They often lack the skills needed to learn the meanings of unknown words and the will to apply these strategies to increase their vocabularies (Irvin, 2001). Readers of high ability will find vocabulary to be the key to unlocking the doors of knowledge, yet those who find the reading process complicated may find that a limited vocabulary is an obstacle to acquiring new knowledge.

CHAPTER 3

THE SOLUTION STRATEGY

Literature Review

Developing the vocabulary knowledge of students has long been a critical component of the educational process. A strong predictor of a child's academic success in school is the size of his or her vocabulary (Stahl & Fairbanks, 1986). Students with limited vocabularies will experience difficulties when reading, writing, and speaking. Reading comprehension requires a strong knowledge of word meaning, as one cannot understand text without knowing what most of the words mean (Nagy, 1988). In addition, the ability to select and use a variety of words when writing and speaking adds clarity and interest to communication. A strong vocabulary or lack thereof has the potential to impact one's standing and prominence in the workplace. Clearly, enriching student vocabularies should be a major focus of teacher instruction (Ediger, 1999).

Historically, vocabulary instruction has consisted of finding isolated words in the dictionary, memorizing the definitions of these words, and using them in sentences. Occasionally, synonyms and antonyms would be added, or a class discussion of word meanings would ensue. However, Nagy and Herman (as cited in Irvin, 2001) concluded, "Teaching children specific words will not, in itself, contribute substantially to the overall

size of their vocabulary" (p. 23). Researching and recording definitions does not provide in-depth understanding in the use of words; rather, it leads to superficial knowledge which is not likely to be retained. Irvin (2001) found two problems with relying on definitions as a way to learn new words. Often a person must know a word to understand the definition, and the definition does not always provide enough information for complete understanding. Thus, the time-honored practice of utilizing the dictionary as the sole method of learning the meaning of new words may not be effective for all students.

Another familiar technique for teaching vocabulary is the use of contextual clues. This strategy involves deriving the meaning of unknown words by analyzing the surrounding text. Research has shown that students profit from being taught how to use contextual analysis to unlock the meanings of unknown words (Buikema & Graves as cited in Watts & Bucknam, 1996). However, like the definitional approach, the contextual approach should not be relied upon as a sole means of instruction. William E. Nagy (1988), author of Teaching Vocabulary to Improve Reading Comprehension, explained ". . . a context may look quite helpful if one already knows what the word means, but it seldom supplies adequate information for the person who has no other knowledge about the meaning of a word" (p. 7). The processes of deriving meaning from context and learning the meanings of unknown words are at different levels of comprehension (Irvin, 2001).

In addition to definitional and contextual approaches to teaching vocabulary, other methods include organizational, structural, and mnemonic instruction. Organizational instruction refers to showing relationships between words through the use

of semantic mapping, categorization, and analogies. Structural instruction refers to the smaller units of meaning found within words, such as root words and affixes. Mnemonic instruction entails presenting strategies to assist in the recall of words and their meanings through the use of associations, acronyms, and songs (Watts, 1995). Since students vary in their learning styles, it would appear that an eclectic approach to vocabulary instruction would be beneficial. However, a study of vocabulary instruction during reading lessons by Watts (1995) found that 87% of the lessons observed utilized a definitional approach, 38% utilized a contextual approach, 18% employed an organizational approach, and 18% relied upon a structural approach. The use of a mnemonic approach in teaching word meanings was not observed in any of the lessons.

Four components for a successful vocabulary instructional program include learning activities focusing on vocabulary that incorporate visual aids, lessons and materials that activate students' prior word knowledge, additional time devoted to both oral and silent reading including multiple exposures to words in a variety of contexts, and numerous experiences that foster deeper, richer understanding of words rather than mere definitions. Three key techniques that will be implemented as part of the solution strategy include the use of picture dictionaries, semantic mapping, and word detective study notebooks. The age of the students will determine to what extent each technique is implemented.

Visual aids and graphic organizers are effective ways to help students to think about words in new and different ways (Nickelsen, 1998). Bromley, DeVitis, and Modlo (1999) stated that

> Graphic organizers include both words and visual images, [and] they are effective with a wide variety of learners, including, gifted, special-needs, and English as a Second Language (ESL) students. Graphic organizers present information in concise ways that highlight the organization and relationships of concepts. They can be used with any subject matter at any level. (p. 6)

Teaching with graphic organizers encourages students to actively participate in the learning process; however, lessons that merely involve brainstorming new words limit the power of graphic organizers. These tools should be used in vocabulary instruction to teach students new concepts, not simply new labels (Nagy, 1988). Heimlich and Pittelman (as cited in Winters, 2001) contended that graphic organizers offer ". . . a rich gestalt of relationships among existing pieces of background knowledge and can be used as a base for introducing new terminology" (p. 660).

One of the most beneficial features of incorporating visual aids and graphic organizers is their ability to draw upon a student's prior knowledge and experiences. New words not connected to existing concepts are easily forgotten (Winters, 2001). They must be integrated with ideas that already exist in the schema of the learner (Irvin, 2001). Students come to the classroom with a wide range of experiences. Research shows that teachers attempt to integrate prior knowledge into most of their instruction but to what extent is questionable (Heap as cited in Watts, 1995). For that reason, vocabulary instruction should take into account students' background knowledge and help them make connections between new words and what they already know (Rupley, Logan, & Nichols, 1999).

Reading instruction, whether listening to a story being read, reading orally, or reading silently, has the potential to impact vocabulary acquisition and development. Furthermore, students learn most of their vocabulary through the act of reading (Weaver as cited in Ainslie, 2001). It then appears that teachers need to provide many opportunities for independent reading time in their classrooms everyday. What is needed to produce vocabulary growth is more non-structured reading time not more vocabulary instructional time (Nagy, 1988). The direct instruction of vocabulary, often referred to as intentional word learning, is an important part of a reading program; however, incidental word learning, the knowledge gained through independent or non-structured reading, can perhaps make more of a contribution to a child's vocabulary. Clearly, students learn words incidentally while reading, and research supports the idea that one can improve at incidental word learning (Swanborn & de Glopper, 1999). Nagy (1988) contended that if a teacher could increase the time spent reading during the school day by 25 minutes, an additional thousand words could be learned by each student per year.

Effective instruction also includes multiple exposures to words in a variety of contexts over time (Beck, Perfetti, & McKeown, 1982). According to Anderson, Heibert, Scott, and Wilkinson (1985), "The single most important activity of building the knowledge required for [student's] eventual success in reading is reading aloud to [them]" (p. 419). A study conducted by Elley (as cited in Brett, Rothlein, & Hurley, 1996) found that repeated reading aloud of stories encouraged incidental learning of vocabulary, and the number of times a word appeared in the story increased the likelihood that a child would remember that word. Yet, researchers disagree on the optimal number of exposures necessary for long-term recall. Brett et al. (1996) found

that multiple readings of the same text are not necessary for vocabulary acquisition if new words are discussed as they appear in the text. However, the combination of multiple exposures and clear explanations of words may play a significant role in the development of a student's vocabulary.

Another significant component of effective vocabulary instruction is the fostering of richer, deeper word knowledge. Word knowledge in the truest sense goes beyond mere definitions or even gaining some meaning from context. It involves active processing that relates words to experiences and concepts, which enhances comprehension, builds vocabulary, and promotes continuous learning (Rupley et al., 1999). Students should be engaged learners, actively involved in a process that transcends recall and repetition and instead focuses on internalizing the meaning of words.

Project Objectives and Processes

As a result of the implementation of instructional strategies focusing on vocabulary acquisition and development during the period of September 2001 through January 2002, the targeted students will improve their understanding of new vocabulary and their ability to apply this knowledge in the appropriate context as measured by a standardized test of expressive vocabulary, a standardized test of receptive vocabulary, and student journals. In order to accomplish the project objectives, the following processes are necessary:

1. Additional time in the classroom will be devoted to silent-oral reading, which will include multiple exposures to words in a variety of contexts.
2. A series of learning activities focusing on vocabulary that incorporate visual aids, including graphic organizers, picture dictionaries, and word walls, will be developed.
3. Lessons and materials that activate students' prior knowledge will be developed.
4. Numerous experiences that foster deeper, richer understanding of words, rather than mere definitions, will be planned.

Project Action Plan

The action plan is presented in outline form listing strategies for each process identified. Due to the different grade levels and content areas, lesson plans will vary. The teacher from each site will develop activities appropriate to the age level of the targeted students from these strategies. The collection of baseline data will begin in August 2001 and be completed by the end of September 2001. Children will be assessed on receptive vocabulary, expressive vocabulary, and the application of vocabulary within the context of

written and spoken language. The assessments will be given again at the end of the intervention program to measure growth. Through a survey, teachers at the site will be asked to share their expertise in vocabulary instruction as well as their perceptions of student vocabulary knowledge. In addition, parents will be asked to complete a survey of their child's vocabulary knowledge while students will respond to a questionnaire assessing their vocabulary abilities. These pretest measures will provide insight into student vocabulary knowledge from the parent perspective and from the point of view of teachers of differing grade levels.

Strategies Outline

I. Increased amount of time spent reading silently and-or orally in the classroom

- A. Oral reading
- B. Silent reading
- C. Paired or group reading time
- D. Books on audiocassette

II. Increased use of visual aids and graphic organizers in vocabulary instruction

- A. Word walls
- B. Concept wheels and maps
- C. Bulletin boards
- D. T-charts
- E. Class books
- F. Art projects
- G. Computer software
- H. Pocket charts

I. Labeling of classroom objects

J. Storytelling apron

III. Activation of prior knowledge to make words meaningful

A. Experience charts

B. Venn diagrams

C. K-W-L charts

D. Environmental print

E. Classroom display of thematic objects

F. Personal reflections

IV. Opportunities for richer, deeper word knowledge

A. Picture dictionaries

B. Semantic webs

C. Semantic feature analysis charts

D. Vocabulary anchors

E. Word games

F. Word detective study notebooks

G. Agree-disagree charts

H. Word inventory charts

I. Reading response notebooks

J. Poetry

K. Stories incorporating vocabulary words

L. Role-playing

M. Classification charts

Methods of Assessment

The receptive vocabulary of all targeted students will be measured by the Peabody Picture Vocabulary Test (PPVT) while the expressive vocabulary of all targeted students will be measured by the Expressive One-Word Picture Vocabulary Test-R (EOPVTR). The PPVT is a standardized, non-verbal test requiring the child to view four pictures and select the one picture that represents the word spoken by the examiner. The EOPVTR is a standardized test requiring the child to view pictures and then verbally identify them. These assessments will be utilized as pretest and posttest measures.

The targeted students' ability to apply vocabulary knowledge will be assessed using a teacher-constructed rubric. The assessment tool will measure the skill of each student to employ a variety of general and theme-related words, utilize words appropriately in context, and exhibit a richness of vocabulary through journal writing. Students will be evaluated on a five-point rating scale by the examiner on a weekly basis. Due to the wide range of developmental language abilities, the researchers determined that the students in kindergarten and first grade could be assessed orally, and responses would be recorded by the examiner. Fourth grade students will be assessed through journal writing.

KINDERGARTEN
Project Implementation Timeline

9/4/01-9/7/01	• Testing Week • Peabody Test of Receptive Vocabulary • One-Word Test of Expressive Vocabulary • Child Survey and Parent Surveys
9/10/01-9/14/01	• Letter Bb Theme: books and buttons • Focus book: I Like Books • Begin word wall • Collect teacher surveys • Introduce The Word Bank
9/17/01-9/21/01	• Letter Ff Theme: friendship • Focus book: Frog and Toad are Friends • Looks like-Feels like chart • Friendly word chart
9/24/01-9/28/01	• Letter Dd Theme: dinosaurs • Focus book: Dinosaur Bob • KWL chart • Dinosaur picture dictionary
10/1/01-10/5/01	• Letter Aa Theme: apples • Focus book: Apples and Pumpkins • Venn diagram • Experience chart
10/8/01-10/12/01	• Letter Gg Theme: graphing • Focus book: Graph Around the Classroom • Searching for Words books • More-Less-Equal
10/15/01-10/19/01	• Letter Mm Theme: Mickey Mouse • Focus book: The M and M Book • Build a book with Mickey • Concept Wheels
10/22/01-10/26/01	• Letter Nn Theme: nutrition • Focus book: Noisy Nora • Food group vocabulary • Venn diagram

10/29/01-11/02/01	• Letter Yy Theme: yardstick (measurement) • Focus book: Inch by Inch • Measuring words
11/5/01-11/9/01	• Review Week • Searching for Words books • Exploring picture dictionaries • Word Bank checklist
11/12/01-11/16/01	• Letter Ii Theme: Indians • Focus book: The Indians Knew • Brainstorm ideas • Words I Know
11/19/01-11/21/01	• Review Week • Thanksgiving thoughts • Concept Wheel
11/26/01-11/30/01	• Letter Tt Theme: transportation • Focus book: Away We Go • Venn diagram • Travel logs
12/3/01-12/7/01	• Letter Ll Theme: languages • Focus book: People Say Hello • Language log • Experience chart
12/10/01-12/14/01	• Letter Xx Theme: experiments • Focus book: Science in Action • Scientific method words • Concept Wheel
12/17/01-12/21/01	• Letter Jj Theme: journals • Focus book: Jillian Jiggs • First journals • Compare/Contrast
1/2/02-1/4/02	• Review Week • Picture dictionaries • Can You Guess the Word?

1/7/02-1/11/02

- Letter Pp Theme: penguins
- Focus book: Penguins
- Searching for Words books
- KWL chart

FIRST GRADE
Project Implementation Timeline

9/4/01-9/7/01	• Administer Peabody Picture Vocabulary Test • Administer the One Word Expressive Vocabulary Test • Students make picture dictionaries
9/10/01-9/14/01	• Read the story "Rain" three times during the week • Read with a partner • Semantic word web—weather words • Journal writing
9/17/01-9/21/01	• Read the story "Five Little Ducks" three times during the week • Listen to the audiocassette of story • Graphic organizer displaying characteristics of ducks • Journal writing
9/24/01-9/28/01	• Read "The Chick and the Duckling" three times during the week • Use of Venn diagram comparing chicks and ducks • Read with a partner • Journal writing
10/1/01-10/5/01	• Read "The Good Bad Cat" three during the week • Make class books showing directional words • Listen to audiocassette • Journal writing
10/8/01-10/12/01	• Read "My Friends" three times during the week • Use a word web to show action verbs • Role play action words • Journal writing
10/15/01-10/19/01	• Read "Bet You Can't" three times during the week • Read with a partner • Art project—labeling objects • Graphic organizer showing words which ask a question
10/22/01-10/26/01	• Read "Coco Can't Wait" three times during the week • Experience chart naming different forms of transportation • Listen to audiocassette • Journal writing

11/5/01-11/9/01	• Read "Down by the Bay" three times during the week • Classroom display showing different animals and their homes • Read with a partner
11/12/01-11/16/01	• Read "Jasper's Beanstalk" three times during the week • Experience chart—What have you planted? • Label gardening tools • Journal writing\
11/19/01-11/21/01	• Read "An Egg is an Egg" three times during the week • Classroom display of objects that change • Bulletin board—How I've Changed
11/26/01-11/30/01	• Read "Whose Baby?" three times during the week • Read with a partner • Matching game—naming mother and baby animals • Journal writing
12/3/01-12/7/01	• Read "Everything Grows" three times during the week • Graphic organizer showing growing versus non-growing items • Role play • Journal writing
12/10/01-12/14/01	• Read "White Rabbit's Color Book" three times during the week • Write poetry using color words • Journal writing
12/17/01-12/21/01	• Read "Hattie and the Fox" three times during the week • Experience chart showing farm animals and their habits • Role play—Reader's Theatre • Read with a partner
1/2/02-1/4/02	• Read "Any Kind of Dog" three times during the week • Semantic mapping—naming pets • Journal writing
1/7/02-1/11/02	• Continue previous week's story • Listen to audiocassette • Personal reflection—"If I could have any pet. . ."

FOURTH GRADE
Project Implementation Timeline

9/4/01-9/7/01
- PPVT/EOWVT/WORD Pretesting of Vocabulary Knowledge
- "Covered Word" Instruction Lesson 1
- Prefixes-Roots-Suffixes Word Map Lesson 1 (bi- and bio-)
- Oral-Silent Reading—20 minutes

9/10/01-9/14/01 Novel Unit: A Taste of Blackberries
- "Covered Word" Instruction Lesson 2
- Prefixes-Roots-Suffixes Word Map Lesson 2 (micro- and mis-)
- Introduction of Word Detectives Study Program
- Word Wall Construction Begins
- Oral-Silent Reading—20 minutes

9/17/01-9/21/01 Novel Unit: A Taste of Blackberries
- "Covered Word" Instruction Lesson 3
- Prefixes-Roots-Suffixes Word Map Lesson 3 (astro- and semi-)
- Journal Assessment
- Word Detectives Notebook-Picture Dictionary
- Graphic Organizer of the Week
- Oral-Silent Reading—20 minutes

9/24/01-9/28/01 Novel Unit: A Taste of Blackberries
- "Covered Word" Instruction Lesson 4
- Prefixes-Roots-Suffixes Word Map Lesson 4 (aqua- and geo-)
- Journal Assessment
- Word Detectives Notebook-Picture Dictionary
- Graphic Organizer of the Week
- Oral-Silent Reading—20 minutes

10/1/01-10/5/01 Novel Unit: The Best Christmas Pageant Ever
- "Covered Word" Instruction Lesson 5
- Prefixes-Roots-Suffixes Word Map Lesson 5 (pre- and re-)
- Journal Assessment
- Word Detectives Notebook-Picture Dictionary
- Graphic Organizer of the Week
- Oral-Silent Reading—20 minutes

10/8/01-10/12/01 Novel Unit: The Best Christmas Pageant Ever

- "Covered Word" Instruction Lesson 6
- Prefixes-Roots-Suffixes Word Map Lesson 6 (auto- and extra-)
- Journal Assessment
- Word Detectives Notebook-Picture Dictionary
- Graphic Organizer of the Week
- Oral-Silent Reading—20 minutes

10/15/01-10/19/01 Novel Unit: The Best Christmas Pageant Ever

- "Covered Word" Instruction Lesson 7
- Prefixes-Roots-Suffixes Word Map Lesson 7 (ab- and anti-)
- Journal Assessment
- Word Detectives Notebook-Picture Dictionary
- Graphic Organizer of the Week
- Oral/Silent Reading—20 minutes

10/22/01-10/26/01 Novel Unit: The Best Christmas Pageant Ever

- "Covered Word" Instruction Lesson 8
- Prefixes-Roots-Suffixes Word Map Lesson 8 (hemi- and mono-)
- Journal Assessment
- Word Detectives Notebook-Picture Dictionary
- Graphic Organizer of the Week
- Oral-Silent Reading—20 minutes

10/29/01-11/02/01 Novel Unit: From the Mixed-up Files of Mrs. Basil E. Frankweiler

- "Covered Word" Instruction Lesson 9
- Prefixes-Roots-Suffixes Word Map Lesson 9 (post- and arch-)
- Journal Assessment
- Word Detectives Notebook-Picture Dictionary
- Graphic Organizer of the Week
- Oral-Silent Reading—20 minutes

11/19/01-11/21/01 Novel Unit: From the Mixed-up Files of Mrs. Basil E. Frankweiler

- "Covered Word" Instruction Lesson 11
- Prefixes-Roots-Suffixes Word Map Lesson 11 (hydro- and ex-)
- Journal Assessment
- Word Detectives Notebook-Picture Dictionary
- Graphic Organizer of the Week
- Oral-Silent Reading—20 minutes

11/26/01-11/30/01 Novel Unit: From the Mixed-up Files of Mrs. Basil E. Frankweiler

- "Covered Word" Instruction Lesson 12
- Prefixes-Roots-Suffixes Word Map Lesson 12 (macro- and poly-)
- Journal Assessment
- Word Detectives Notebook-Picture Dictionary
- Graphic Organizer of the Week
- Oral/Silent Reading—20 minutes

12/3/01-12/7/01 Novel Unit: From the Mixed-up Files of Mrs. Basil E. Frankweiler

- "Covered Word" Instruction Lesson 13
- Prefixes-Roots-Suffixes Word Map Lesson 13 (pro- and psych-)
- Journal Assessment
- Word Detectives Notebook-Picture Dictionary
- Graphic Organizer of the Week
- Oral-Silent Reading—20 minutes

12/10/01-12/14/01 Novel Unit: Matilda

- "Covered Word" Instruction Lesson 14
- Prefixes-Roots-Suffixes Word Map Lesson 14 (meter- and dis-)
- Journal Assessment
- Word Detectives Notebook-Picture Dictionary
- Graphic Organizer of the Week
- Oral-Silent Reading—20 minutes

12/17/01-12/21/01 Novel Unit: Matilda

- "Covered Word" Instruction Lesson 15
- Prefixes-Roots-Suffixes Word Map Lesson 15 (port- and cosmo-)
- Journal Assessment
- Word Detectives Notebook-Picture Dictionary
- Graphic Organizer of the Week
- Oral-Silent Reading—20 minutes

1/2/02-1/4/02 Novel Unit: Matilda

- "Covered Word" Instruction Lesson 16
- Prefixes-Roots-Suffixes Word Map Lesson 16 (patri- and matri-)
- Journal Assessment
- Word Detectives Notebook-Picture Dictionary
- Graphic Organizer of the Week
- Oral-Silent Reading—20 minutes

1/14/02-1/18/02	• PPVT-EOWVT-WORD Posttesting of Vocabulary Knowledge • Final Journal Assessment

CHAPTER 4

PROJECT RESULTS

Historical Description of the Intervention

The objective of this project was to improve students' working vocabulary knowledge. Vocabulary knowledge refers to both the understanding of words and the overall ideas and concepts being communicated. Strategies implemented to improve students' working vocabulary knowledge included: learning activities incorporating visual aids, lessons and materials focused on activating prior word knowledge, additional time devoted to both oral and silent reading including multiple exposures to words in a variety of contexts, and numerous experiences that fostered deeper, richer understanding of words rather than mere definitions. An 18-week intervention was initiated in each of the three classrooms. The aforementioned strategies were selected and utilized by all researchers but tailored to accommodate the different grade levels represented in the study. The Expressive One-Word Picture Vocabulary Test (EOWPVT) was used to assess each student's expressive vocabulary, while the Peabody Picture Vocabulary Test (PPVT) was used to assess each student's receptive vocabulary.

Each week new vocabulary was introduced using a variety of visual aids and graphic organizers (see Appendix). This strategy allowed students to think about words in different ways, to actively participate in the learning process by brainstorming, and to

organize and assimilate new information. Lessons incorporating word webs and experience charts were appropriate for each grade level, while more complex tools such as semantic feature matrices and multiple meaning maps were more applicable for the fourth grade classroom. The utilization of visual aids and graphic organizers addressed the needs of auditory, visual, and kinesthetic learners.

A beneficial feature of integrating visual aids and graphic organizers into the action plan was its ability to draw upon a student's prior knowledge and experiences. Since the students possess a wide variety of experiences, the researchers attempted to link prior knowledge with the new vocabulary introduced weekly in the classroom. In the kindergarten and first grade classrooms, physical objects were used to help the children activate prior knowledge. This hands-on approach allowed the students to better understand concrete vocabulary. The vocabulary introduced in the fourth grade classroom consisted of both abstract and concrete words. Thus, a blend of instructional strategies was used, including oral discussion, predicting, and reading in a variety of contexts.

Since students learn most of their vocabulary through the act of reading, the researchers allocated additional time both in silent and oral reading each day. This time provided students with the multiple exposures necessary for retention of the meaning of new vocabulary words. In the kindergarten classroom, many theme-related books were on display each week with one selected for repeated reading. In the first grade classroom, one specific theme-related book was read independently three times during the week. Due to higher reading ability in the fourth grade classroom, students alternated

daily between sustained silent reading and listening to the teacher read. The researchers strived to provide a balance between structured and non-structured reading time.

A final component of effective vocabulary instruction included the fostering of richer, deeper word knowledge within oral and written communication. The researchers' aim was to develop a program which transcended mere definitional knowledge and encouraged a more meaningful understanding of words. Through various instructional activities students delved deeper into words, which provided them with more than "surface knowledge" and helped them internalize the meaning of words. The kindergarten and first grade students demonstrated their increased vocabulary knowledge orally, while fourth grade students conveyed their understanding through written means.

In the kindergarten classroom, new vocabulary was based upon weekly themes. At the beginning of each week, the researcher met with each of the six targeted students to assess their prior knowledge of the theme. Students' remarks were recorded by the researcher and were used to establish baseline data (see Appendix F). This process was repeated at the end of each week to determine if there was improvement in vocabulary knowledge.

A variety of theme-related trade books were selected by the researcher and used to introduce and develop new vocabulary, with one trade book being the primary source of information. This book was read at least two times each week. The reading of these trade books allowed students to hear content vocabulary used correctly in context and provided them with high-interest visual representations. In addition, songs and poems related to the theme permitted the researcher to accommodate the various learning styles of the students.

For many of the students, kindergarten provided the first exposure to graphic organizers. K-W-L Charts, Venn diagrams, and word webs assisted the students in generating ideas and organizing the information. From these charts, new vocabulary words were identified, discussed in detail, and exhibited in prominent places in the classroom. Students referred to these charts and diagrams when discussing the weekly themes. Furthermore, students had access to numerous physical objects they could manipulate which supported the theme.

In the first grade classroom, the targeted vocabulary words came from the district reading curriculum. Each week a new story was introduced to the students through oral reading and discussion. The story was read silently by individual students at least three times per week, read aloud to classmates and sixth-grade reading partners, and listened to periodically on audiocassette. These repeated activities provided students with multiple exposures to content vocabulary.

The age of the six targeted first grade students allowed the researcher to introduce more complex graphic organizers than were used in kindergarten. These types of lessons were largely teacher-directed with the students generating the information and the researcher recording their responses. Word webs, experience charts, Venn diagrams, and cause-and-effect charts were useful tools for assimilating student thoughts concerning vocabulary. These charts were displayed around the classroom as visual reminders for the students when they wrote in their journals.

First grade students were encouraged to use new vocabulary in their weekly writing assignments. The researcher chose one writing activity per week for assessment. Writing prompts were based on ideas from the chosen reading selection. Some students

had a difficult time writing and were thus persuaded to illustrate words rather than write them. Student-created picture dictionaries provided students easy access to words relating to everyday experiences.

In the fourth grade classroom, new vocabulary was derived from thematic units based on three children's novels. The researcher selected six to eight words per week from the novel on which to focus. These words were recorded in student vocabulary notebooks. Each of the six targeted students was required to locate and read the passage in which the word was used, make a prediction as to the word's meaning based on its use in the novel, record the appropriate definition from the dictionary and the example sentence from the novel, and judge their accuracy in predicting. In addition, students created colored illustrations to accompany words.

The researcher developed a word wall which displayed the aforementioned vocabulary words. The words were categorized by parts of speech and provided a visual reminder for students when they completed the weekly writing assessments. These assessments were based on themes from each novel and were designed to encourage the use of thematic vocabulary.

A further area of focus in the fourth grade classroom was the study of prefixes, suffixes, and root words. Two prefixes, root words, or suffixes commonly used in the English language were studied each week. During this teacher-directed activity, students used dictionaries to locate words containing the chosen prefix, suffix, or root word and then discussed the meaning of the word as it related to that particular root or affix. The brainstorming of words containing prefixes and suffixes was recorded on a word web, while a tree organizer was used for recording root words. In addition, synonym and

antonym wheels, multiple meaning maps, and semantic feature matrices were utilized to delve deeper into the meanings of these words (see Appendices).

At the close of the intervention period, the PPVT was again given to measure changes in the targeted students' receptive vocabulary. The EOWPVT was also administered to measure changes in the targeted students' expressive vocabulary. Finally, the student responses collected during the study were evaluated using the teacher-created rubric (see Appendix).

Presentation and Analysis of Results

The receptive vocabulary of targeted kindergarten, first, and fourth grade students was measured by the Peabody Picture Vocabulary Test (Dunn, Dunn, and Dunn, 1997). Receptive vocabulary refers to the understanding of word meanings. This standardized, non-verbal test required the child to view four pictures and select the one picture that represented the word spoken by the examiner. This test was administered individually to six targeted students in each of the three classrooms in September and January. The instrument measured the general vocabulary competency of the students. The examiners chose this test because it could be administered across grade levels.

The students' individual raw scores were tabulated, and the results were converted into national percentiles. The pretest data revealed that 6 of the targeted students scored above the 60th percentile, 10 ranked between the 20th and 60th percentiles, and 2 students scored below the 20th percentile. Upon analyzing the posttest data, it was noted that 10 of the targeted students scored above the 60th percentile, 8 ranked between the 20th and 60th percentiles, and no students scored below the 20th percentile (see Figure 1).

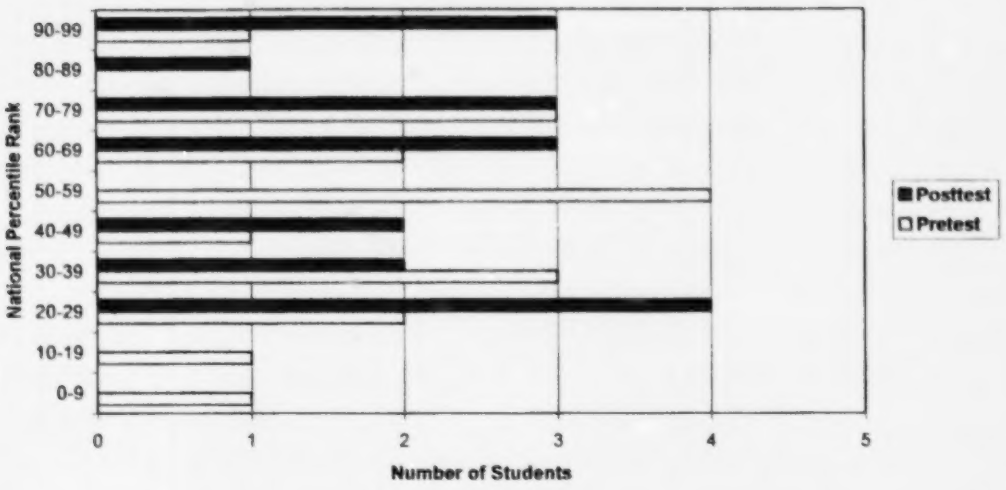

Figure 1. Pretest and posttest results of 18 targeted students' performance (6 each from grades kindergarten, first, and fourth) on the Peabody Picture Vocabulary Test (PPVT).

Unlike the pretest data which created a bell-shaped curve, the posttest data revealed a marked increase in the number of students scoring in the above average to high range and a decline in the number of students scoring in both the average and low ranges. A subsequent breakdown of scores by grade level indicated that kindergarten students performed significantly better than first and fourth grade students on the pretest and posttest of the PPVT. The mean percentile score for the six targeted kindergarten students increased from 58 to 70, while the equivalent score for the six targeted fourth grade students rose from 47 to 58. Although there was a slight increase in the mean percentile score for first grade students (44 to 48), individual student scores ranged from a 52-point decrease to a 64-point increase.

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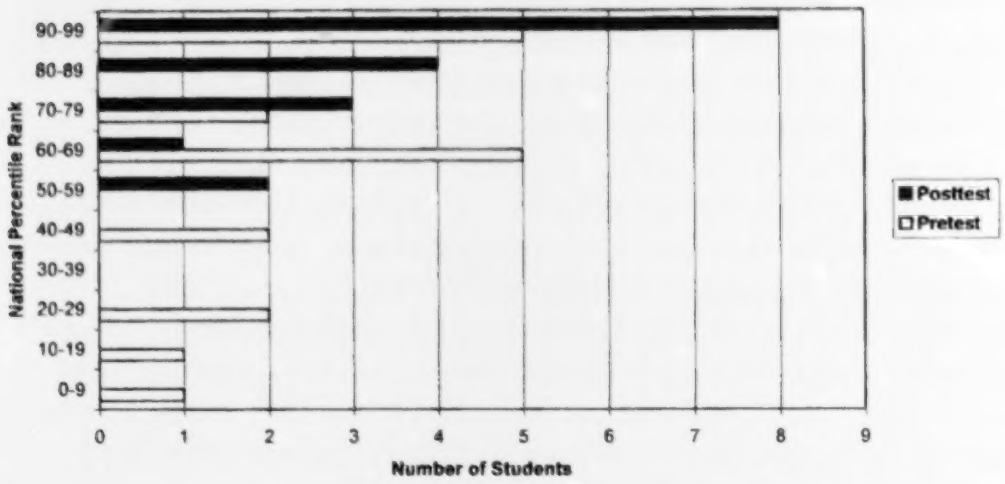

Figure 2. Pretest and posttest results of 18 targeted students' performance (6 each from grades kindergarten, first, and fourth) on the Expressive One-Word Picture Vocabulary Test-R (EOWPVT-R).

As with the Peabody Picture Vocabulary Test, individual raw scores on the Expressive One-Word Picture Vocabulary Test-R were tabulated, and the results were converted into national percentiles. The pretest data revealed that 12 students scored above the 50th percentile, with 5 scoring above the 80th percentile. Upon analyzing the posttest data, it was noted that all targeted students scored above the 50th percentile, with 12 scoring above the 80th percentile (see Figure 2).

Each of the 18 targeted students exhibited an increase in performance from the pretest to the posttest. A subsequent breakdown of the data by grade level indicated that kindergarten students showed the most significant increase from pretest to posttest, with the mean percentile score rising from 35 to 81. First and fourth grade students' scores were more similar, with fourth grade results increasing from 70 to 83 and first grade results increasing from 74 to 87.

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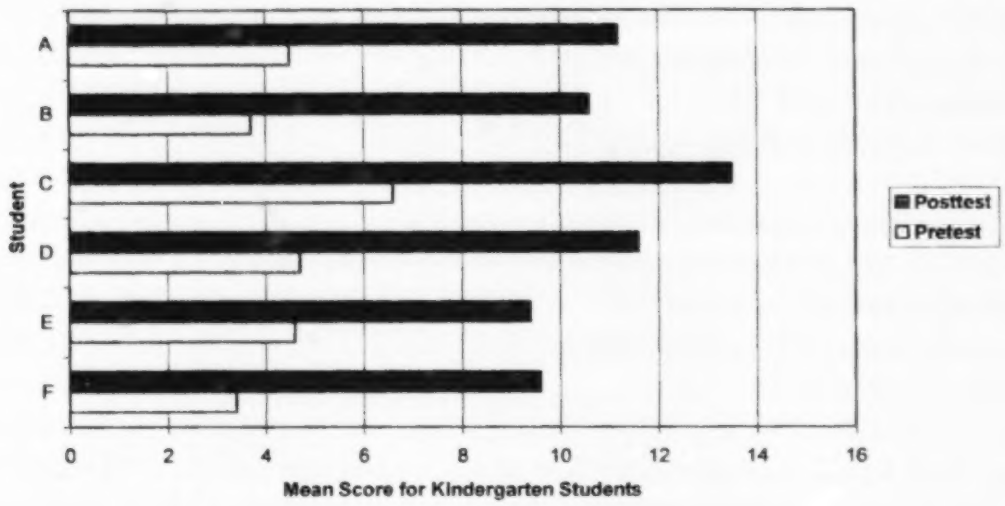

Figure 3. Average pretest and posttest results of targeted kindergarten students' performance on teacher-made vocabulary assessments.

The vocabulary development of kindergarten students was assessed using a researcher-created rubric. This rubric measured four objectives of vocabulary development: the use of word variety, which pertains to incorporating an array of word choices and sentence beginnings; the appropriate use of words in context, which relates to the sensibility of sentences; the use of theme-related vocabulary, which tests the children's ability to recall and employ content vocabulary; and the clarity and accuracy of vocabulary, which assesses the children's ability to use vivid description and detail in their oral or written communication. Student responses were judged on a numeric, four-point scale with highly skilled responses receiving four points, moderately skilled receiving three points, skilled receiving two points, poorly skilled earning one point, and unskilled or no response earning a zero. The scores on each of the objectives were totaled, with 16 points being the highest possible cumulative score.

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During the intervention period, 11 pretests and posttests were obtained orally from each of the targeted kindergarten students. These assessments were evaluated, scored, and averaged so that a mean pretest and posttest score could be generated for each student (see Figure 3). There was a marked increase in the mean posttest score for all targeted students. The mean score on the pretest for this subgroup was 4.6, whereas the mean posttest score was 10.9. Even Student B, who had the lowest mean posttest score, showed an increase of more than 100% from the pretest.

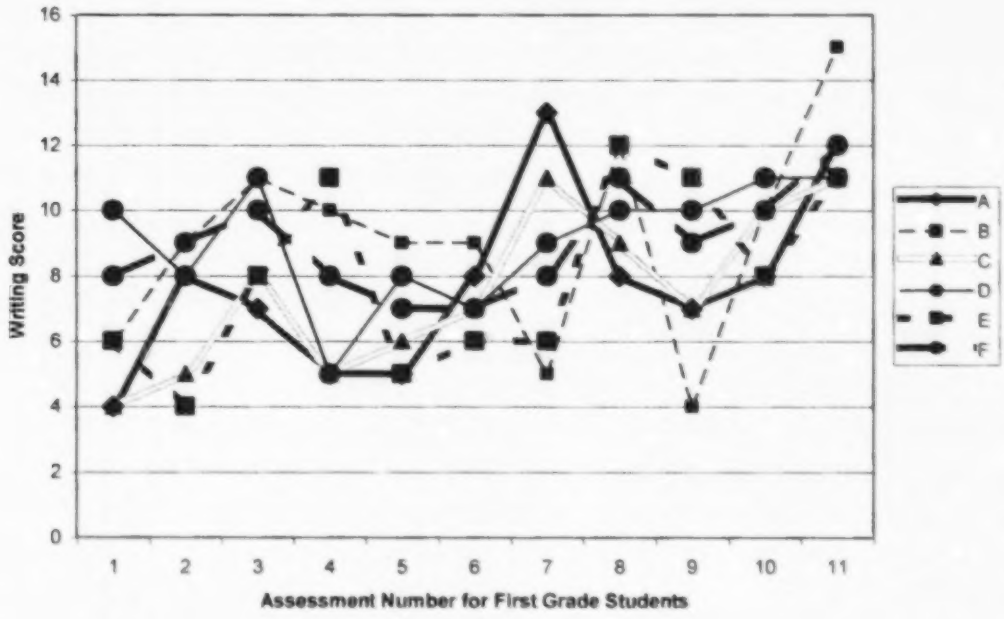

Figure 4. Results of targeted first grade students' performance on teacher-made vocabulary assessments.

During the intervention period, 11 writing samples of the targeted first grade students were collected and evaluated using the teacher-created rubric. The criteria used for judging was the same as that used for the kindergarten responses. Upon analysis of the first writing sample, it was noted that scores ranged from 4 to 10 with a mean score of

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6.3. The final writing sample showed a range from 11 to 15 with a mean score of 12. Although the graph indicates a fluctuation among individual students' scores, a progressive increase in vocabulary knowledge can be observed when analyzing the range of data during the intervention period.

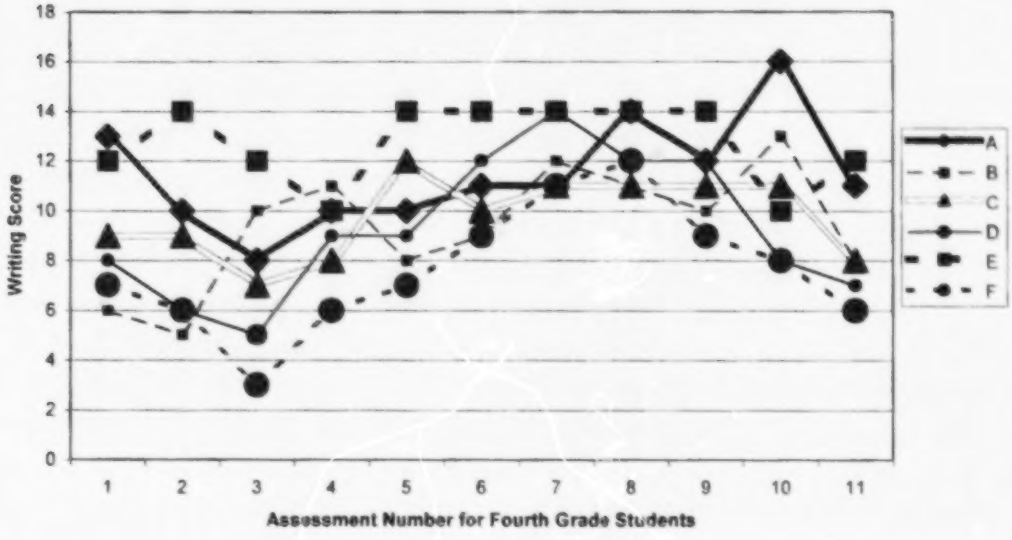

Figure 5. Results of targeted fourth grade students' performance on teacher-made vocabulary assessments.

During the intervention period, 11 writing samples of targeted fourth grade students were collected and evaluated using the teacher-created rubric. The criteria used for judging was the same as that used for the kindergarten and first grade responses. Upon analysis of the first writing sample, it was noted that scores ranged from 6 to 13 with a mean score of 9.2. The 10th writing sample showed a range from 8 to 16 with a mean score of 11. The 3rd and 11th writing samples showed a significant decline in scoring when compared with their respective preceding samples. For example, the scores of Student A rose from a 13 on the 1st writing sample to a 16 on the 10th sample;

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however, Student A exemplified the targeted group's general decline with a score of 8 on the 3rd assessment and an 11 on the 11th assessment.

Conclusions and Recommendations

The results of the data indicate that the vocabulary of the students at each grade level increased. The standardized assessments reveal a moderate increase in the students' receptive vocabulary and a substantial increase in students' expressive vocabulary. In other words, the students demonstrated more skill in verbalizing their responses to pictures than in selecting one specific picture when given a vocabulary term. Many possible explanations may account for this significant difference in results.

On the EOWPVT, an assessment of expressive vocabulary, students are permitted to think aloud when answering, which activates prior knowledge. They also appeared to be more at ease with the researcher during posttesting, which may have contributed to increased verbalization. Furthermore, unlike the PPVT, an assessment of receptive vocabulary, students are not presented with many possibly confusing choices. The EOWPVT focuses children's attention on one specific picture and allows them to verbally brainstorm their thoughts and feelings. The PPVT presents children with four pictures and requires them to analyze and discern the correct match to the spoken word, thought processes which are challenging for many students.

In addition to increases in receptive and expressive vocabulary, students also used more theme-related words when speaking and writing according to the teacher-made assessments implemented during the intervention period. Students demonstrated an increased ability in using a variety of words in speaking and writing and applying these words correctly in context. Generally, the richness and complexity of student responses,

which the researchers refer to as accuracy and clarity of language, improved over time. However, the researchers agree that this objective was the most difficult to assess, mainly due to the developmental limitations of the kindergarten and first grade students. Since fourth grade students have more experiences and a larger word bank upon which to draw, their writings tended to be more complex and filled with richer, deeper vocabulary. Kindergarten and first grade student responses tended to be simpler, as they are just beginning to build their word banks.

The researchers agree that providing students with multiple exposures to new vocabulary, instructing students in the use of graphic organizers, allocating more time to oral and silent reading, and delving deeper into word meanings were key components to the success of the intervention. Added benefits of the intervention noticed by the researchers were an increased desire to communicate, an escalation in the volume of communication, and an increased confidence in oral or written communication. First and fourth grade researchers noted that new vocabulary was retained over time as evidenced by their students' writing. Data was not specifically collected with respect to the aforementioned benefits, but the fact that such benefits occurred was noteworthy.

The researchers would suggest modifying several components of the intervention. First, the researchers would eliminate the student survey. No pertinent information was obtained from the survey because students misinterpreted many of the questions. Furthermore, while it was interesting to compare the teacher and parent views from their respective surveys, the information from these surveys was not critical to the intervention.

The selection of themes was a critical element to the success of the intervention. However, some of the chosen themes were not as conducive to developing vocabulary knowledge as others. For example, kindergarten students were asked to express their knowledge concerning graphing. The researcher noted that kindergarten students had little prior knowledge of this topic, and the topic did not lend itself to producing sufficient theme-related words that could be used in speaking and writing. Furthermore, the decline in scores on the 3rd and 11th writing samples of the targeted fourth students may be attributed to unclear, poorly constructed writing prompts. Thus, the researchers would recommend that more careful consideration be given to the selection of themes and writing prompts based on students' prior knowledge of the topic and how intriguing and stimulating a particular topic is to the students.

A final modification the researchers would propose is to change the time of the year in which the intervention plan is implemented. The researchers feel that the second semester would be a more appropriate time to conduct this research. The first semester contains many shortened school weeks due to holidays, school events, and teacher meetings. This abbreviated schedule limits the time needed to thoroughly develop the weekly theme. Furthermore, by the beginning of second semester, students in all grade levels tend to be more confident in their oral and written communication, more at ease with the researcher, and familiar with classroom expectations.

In conclusion, the researchers would endorse the strategies implemented during the intervention period. There was sufficient improvement in students' vocabulary knowledge to warrant the incorporation of these strategies into any teacher's repertoire.

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APPENDICES

Parent Survey on Vocabulary Knowledge

Directions: ***Please read the following questions concerning your child's vocabulary knowledge. Circle the appropriate response. Feel free to add comments where appropriate. Use the following key when answering: 1=Never, 2=Seldom, 3=Sometimes, and 4=Always.***

1. How often do you read with your child? **1 2 3 4**

   Comments: _____

2. Is your child interested in learning new words? **1 2 3 4**

   Comments: _____

3. Is your child able to carry on an age-appropriate conversation with his/her peers?

   1 2 3 4

   Comments: _____

4. Do you regularly spend time with your child engaged in conversation?

   1 2 3 4

   Comments: _____

5. Does your child spend time on his/her own reading or looking at reading material?

   1 2 3 4

   Comments: _____

6. Do you and your child spend time at the library? **1 2 3 4**

   Comments: _____

7. How often does your child ask you the meaning of a word he/she does not know?

1 2 3 4

Comments: _____

8. Does your child enjoy playing word games? **1 2 3 4**

Comments: _____

Directions: ***Please answer the following questions.***

1. At what age did your child begin talking? _____

2. Does your child have siblings? _____ If so, how many? _____

3. Does your child have a TV in his/her bedroom? _____

4. Does your child have ample reading material, games, or computer games at home? _____

If so, what kind? _____

5. Does your child regularly take part in dinner conversation? _____

Additional Comments:

_____

_____

_____

_____

_____

Teacher Survey on Vocabulary Knowledge and Instruction

Directions: ***We are conducting this survey to gather data for an action research project. We would like to assess your feelings concerning vocabulary knowledge and instruction. Use the following key when answering: 1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree. Please feel free to add comments at the bottom of the page.***

1. I feel reading aloud to my students improves their vocabulary.

1 2 3 4

2. I feel comfortable reading the same book more than one time in my classroom.

1 2 3 4

3. I feel children today have a larger working vocabulary than they did 10 years ago.

1 2 3 4

4. I feel my students transfer knowledge of their vocabulary into daily writing.

1 2 3 4

5. I feel preteaching vocabulary words prior to a unit of study is important.

1 2 3 4

6. I feel my students are given ample opportunity to read during the school day.

1 2 3 4

7. I feel our current reading series provides adequate vocabulary instruction.

1 2 3 4

8. I feel the need to add materials to supplement the vocabulary program in the reading series.

1 2 3 4

9. I feel the vocabulary level in the reading series is too challenging for my students.

1 2 3 4

10. I feel the use of graphic organizers is important to vocabulary instruction.

1 2 3 4

11. I feel my students rely mostly on context to decipher the meaning of unknown words.

1 2 3 4

12. I feel my students enjoy learning about new words.

1 2 3 4

Comments:

Student Questionnaire on Vocabulary Knowledge

Kindergarten and First Grade

Directions: ***The examiner will dictate the following questions and record each student's response.***

1. When your mother and father are reading a story to you and they read a word you do not know, what do you do?

_____

_____

2. How do you learn new words?

_____

_____

3. When someone is reading to you, what do you like best about it?

_____

_____

4. Tell me what other places besides in books where you might see words.

_____

_____

5. How many words to you think you know?

_____

_____

APPENDIX D

Student Questionnaire on Vocabulary Knowledge and Instruction

Fourth Grade

Directions: ***Please answer the following questions in complete sentences.***

1. When you are reading and come to an unknown word, what strategies do you use to figure it out?

_____

_____

2. What are some of the ways you have been taught vocabulary words by other teachers?

_____

_____

3. How would you suggest that I teach you new vocabulary words?

_____

_____

4. Tell why you like or dislike reading.

_____

_____

_____

5. How many words do you think you know?

_____

_____

APPENDIX E

Rubric for Vocabulary Usage in Journal Writing

Objectives	Unskilled	Poorly Skilled	Skilled	Moderately Skilled	Highly Skilled	Earned Points
Variety of Words Used	**0 points** No Response	**1 point** Little evidence of variety	**2 points** Some evidence of variety	**3 points** Strong evidence of variety	**4 points** Exceptional evidence of variety	
Clarity and Accuracy of Vocabulary	**0 points** No response	**1 point** Little evidence of clarity and accuracy	**2 points** Some evidence of clarity and accuracy	**3 points** Strong evidence of clarity and accuracy	**4 points** Exceptional evidence of clarity and accuracy	
Appropriate Use of Words in Context	**0 points** No response	**1 point** Little evidence of contextual knowledge	**2 points** Some evidence of contextual knowledge	**3 points** Strong evidence of contextual knowledge	**4 points** Exceptional evidence of contextual knowledge	
Use of Theme-related Vocabulary	**0 points** No response	**1 point** 1 new word used	**2 points** 2 new words used	**3 points** 3 new words used	**4 points** 4 or more words used	
					Score:	

APPENDIX F

Weekly Pre-test

At the beginning of the week

Prompt: Tell me what you know about:

Code

APPENDIX F

Weekly Post-test

At the end of the week

Prompt: Tell me what you know about:

Code

Name _____

Vocabulary Inventory

Words I Know Well	Words I Have Seen Before (I think I know the meaning)	Words I Don't Know

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